26. FISHES OF RAMANADHI RIVER IN KALAKKAD MUNDANTHURAI TIGER RESERVE, TAMIL NADU, INDIA

Fish survey was carried out as a part of a research programme on the fish habitats and communities in Tamiraparani river basin of Western Ghats. Ramanadhi river has two tributaries which are dammed upstream. There are six man-made canals and 32 associated wetlands to form a sub-basin of the major Tamiraparani river basin. This is the first report on fishes from Ramanadhi in Kalakkad Mundanthurai Tiger Reserve. Species recorded in the present work have already been recorded by earlier workers Johnsingh and Wickram (1987), Rema Devi *et al.* (1997), Arunachalam *et al.* (1997), Arunachalam and Sankaranarayanan (1998a, b) Arunachalam and Johnson (in press) and Arunachalam (2000) in Tamiraparani river and its sub-basins.

Ramanadhi river takes its origin in the eastern slopes of the Western Ghats at 1,572 m above msl (8° 50' 45" N, 77° 19' 15" E). After flowing about 8 km along the eastern slopes of the Western Ghats, through thickly wooded forests, it emerges on the plains on the north-eastern side of Melakadayam village, Ambasamudram taluka, Tirunelveli district. After flowing another 7 km, it is joined by the Jambunadhi river and (now Veeranathi), flows through the plains for 12 km. It meets Gadana river to the northeast of Kila Ambur village in Ambasamudram taluka. The average rainfall is 183 mm (data of Public Works Department, Govt. of Tamil Nadu).

Fishes were collected from upstream, downstream and some associated wetlands using drag nets, monofilament gill nets and scoop nets. Colour, spots and other characters were noted and the specimens were then preserved in 10% formaline. Standard literature was referred for identification.

We recorded 25 species belonging to 18 genera and 10 families, representing 4 orders, (Table 1). All the species are known from Tamiraparani river and its sub-basins (Rema Devi *et al.* 1997, Arunachalam 1998)

TABLE 1
FISH SPECIES RECORDED IN RAMANADHI RIVER AND ITS ASSOCIATED WETLANDS

Species	Status
I ORDER: CYPRINIFORMES	
i) Family: Cyprinidae	
a) Genus: *Puntius*	
1. *Puntius amphibius*	n.a.
2. *Puntius arenatus*	n.a.
3. *Puntius bimaculatus*	n.a.
4. *Puntius dorsalis*	En
5. *Puntius sarana subnasutus*	n.a.
6. *Puntius sophore*	LRnt
b) Genus: *Salmostoma*	
7. *Salmostoma clupeoides*	LRlc
c) Genus: *Amblypharyngodon*	
8. *Amblypharyngodon microlepis*	n.a.
d) Genus: *Danio*	
9. *Danio aequipinnatus*	LRnt
e) Genus: *Esomus*	
10. *Esomus thermoicos*	n.a.
f) Genus: *Parluciosoma*	
11. *Parluciosoma daniconius*	LRnt
g) Genus: *Garra*	
12. *Garra mullya*	n.a.
ii. Family: Balitoridae	
h) Genus: *Bhavania*	
13. *Bhavania australis*	En
i) Genus: *Nemacheilus*	
14. *Nemacheilus triangularis*	LRlc
iii) Family: Cobitidae	
j) Genus: *Lepidocephalus*	
15. *Lepidocephalus thermalis*	n.a.
2. ORDER: SILURIFORMES	
iv. Family: Bagridae	
k) Genus: *Mystus*	
16. *Mystus armatus*	n.a.
v. Family: Heteropneustidae	
l) Genus: *Heteropneustes*	
17. *Heteropneustes fossilis*	Vu

TABLE 1 (contd.)
FISH SPECIES RECORDED IN RAMANADHI RIVER AND ITS ASSOCIATED WETLANDS

Species	Status
3. ORDER: CYPRINODONTIFORMES	
vi. Family: Aplocheilidae	
m) Genus: *Aplocheilus*	
18. *Aplocheilus lineatus*	n.a.
4. ORDER: PERCIFORMES	
vii. Family: Ambassidae	
n) Genus: *Pseudambassis*	
19. *Pseudambassis ranga*	n.a.
viii. Family: Cichlidae	
o) Genus: *Etroplus*	
20. *Etroplus maculatus*	n.a.
p) Genus: *Oreochromis*	
21. *Oreochromis mossambica*	Exotic
ix. Family: Gobidae	
q) Genus: *Glossogobius*	
22. *Glossogobius giuris*	LRnt
x. Family: Belontiidae	
r) Genus: *Macropodus*	
23. *Macropodus cupanus*	n.a.
xi. Family: Channidae	
s) Genus: *Channa*	
24. *Channa marulius*	LRnt
xii. Family: Mastacembelidae	
t) Genus: *Mastacembelus*	
25. *Mastacembelus armatus*	n.a.

n.a. - not assessed; LRnt - Lower Risk, near threatened; Vu - vulnerable; LRlc - Lower Risk, least concern; En - Endangered

The headwaters and the lowlands of Ramanadhi river are highly disturbed as the riparian forests are replaced by coconut and teak plantations by private owners inside the forest reserve area. Introduction of the exotic cichlid fish *Oreochromis mossambica* also threatens the fish fauna in the lowland.

We could not observe a single specimen of *Puntius arulius tambiraparniei* in the Ramanadhi, though this endemic species is recorded in streams and rivers of Tamiraparani, Manimuthar, Servalar, Gadana and Chittar river basins (Rema Devi *et al.* 1997, Arunachalam *et al.* 1997, Arunachalam, 1998).

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27. MIGRATION OF BLUE MORMON BUTTERFLY *PAPILIO POLYMNESTER* IN MUMBAI (MAHARASHTRA)

The presence of the Blue Mormon butterfly *Papilio polymnester* in and around Mumbai was recorded by W.F. Melvin at Sewree in March 1889 and A.E.G. Best (1951) at Tulsi lake. D.E. Reuben had observed them in 1960-62 and suggested that this butterfly appears seasonally in the Pali Hill (Bandra) area. Serrao (1978) observed a Blue Mormon flying east to west on September 23, 1970. He recorded a number of individuals flying in the same direction till end October, 1970. He also observed many Blue Mormons feeding on flowers till March 1971 in the Tulsi lake environs.

Haribal (1986) recorded a few sightings of these butterflies at the Indian Institute of Technology, Powai, Mumbai every year from 1978 to 1982. However, in all these sightings, they did not appear to be flying in any particular direction, except near Matunga station, where the butterfly was definitely flying westwards.

The first author (NC) saw them at Goregaon, Mumbai on September 15, 1999 around noon. The flight was rapid, at 30 m above ground level, and was westwards. A similar observation was made on September 18, 1999.

Interestingly, the second author (VH) has seen another live specimen at Hornbill House, Colaba, Mumbai on September 22, 1999, flying east to west. Earlier, this species was observed by the first author (NC) at Goregaon on August 28, 1995. A female Blue Mormon was sighted at Khar (Mumbai) in the first week of September (Isaac Kehimkar *pers. comm.*). The butterfly laid eggs on a *Citrus* plant.

From these observations, it is evident that the Blue Mormon is a seasonal migrant, and arrives in Mumbai during late August to September. As it is usually found in hilly regions around 350 m above msl, with heavy rainfall, it is possible that migration depends on good rainfall in Mumbai during August and September.

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